TRIPLETT

INSTRUCTION MANUAL

MODEL 801 TYPE 2
SOLID STATE
VOLT-OHM-MILLIAMMETER

STABRO LABORATORIES, INC.
TECHNICAL REFERE
DOCUMENT CONTROL ADMIN

SAFETY NOTICE

Electricity can be dangerous. Observe good safety practice when making measurements on electrical circuits.

Never touch any exposed energized electrical circuit since contact may cause burns or produce lethal electrical currents.

Before making any measurement with the V.O.M. make sure that the switches and test leads are all in their proper locations for the function and range desired.

Never make a range or a function change in the V.O.M. while connected in or to a live circuit.

When measuring high voltages special additional precautions are necessary. Turn off the power before connecting the test probes. Make sure that any capacitors in the circuit are discharged. If no voltage is present, clip the test probes to the circuit. Arrange the V.O.M. and test leads to be clear of grounds, etc.

Turn on the power, and make your reading. Do not handle or touch the V.O.M., test leads or probes while the power source is on. Turn off the power — observe the meter to see that it has returned to "Zero," before removing the probes from the circuit.

CAUTION — In High Power circuit areas such as distribution transformers, dangerous arcs of explosive nature can occur if the circuit is shorted. A V.O.M. switched to a current or low ohm range, when it should be on a voltage range could be the cause of an explosive short. **Always be sure that the V.O.M. is set up for the correct function and range before attempting any measurement.**

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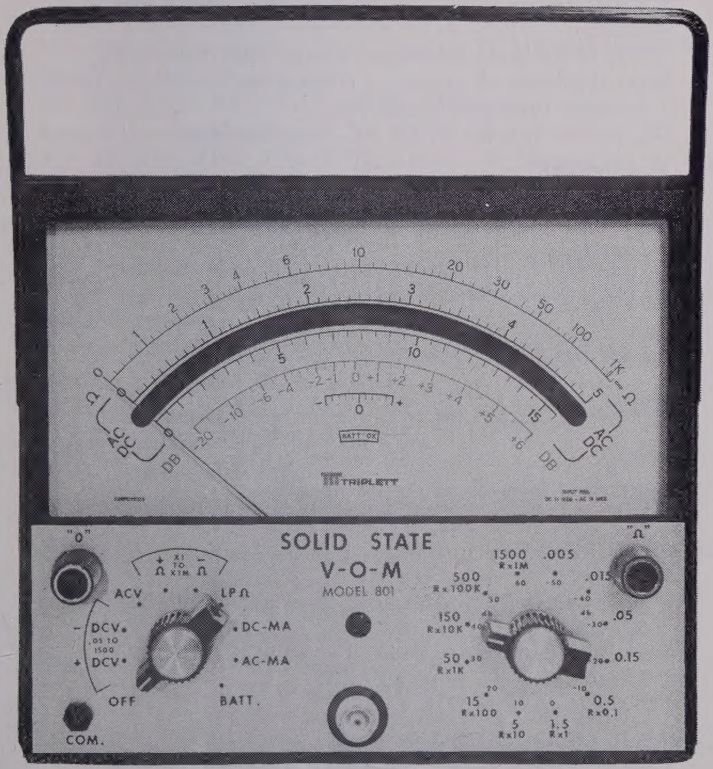

SOLID STATE
V-O-M
MODEL 801
TRIPLETT
"0"
"Ω"
ACV
LP Ω
DCV
DC-MA
AC-MA
OFF
BATT.
COM.
1500 .005
500
150
50
15
5
1.5
0.5
.015
.05
0.15
R x 1M
R x 100K
R x 10K
R x 1K
R x 100
R x 10
R x 1
R x 0.1
BATT OK
AC
DC
DB

MODEL 801

MODEL 801 SPECIFICATIONS

DC VOLTMETER

Ranges:
0 - .05, .15, .5, 1.5, 5, 15, 50, 150, 500, 1500 Volts.

Accuracy:
±2% of full scale all ranges, except 1500 Volts ±3%.
Input resistance all ranges - 11 megohms.
1 megohm resistor in probe tip.
DC section includes 40 DB AC rejection filter.

AC VOLTMETER

Ranges:
0 - .005, .015, .05, .15, .5, 1.5, 5, 15, 50, 150, 500, 1500 Volts.

Accuracy:

Range	Frequency	Accuracy
.005 to .5 V	50 Hz to 20 KHz	±3%
	20 KHz to 50 KHz	±5%
1.5 to 150 V	50 Hz to 1 KHz	±3%
	1 KHz to 20 KHz	±5%
500 V	50 Hz to 1 KHz	±3%
	1 KHz to 5 KHz	±5%
1500 V	50 Hz to 1 KHz	±5%

Input resistance all ranges 10 megohms.
Input capacitance at input jack 80 mmfd. nominal.

DB MEASUREMENTS

Ranges:
—50, —40, —30, —20, —10, 0, +10, +20, +30, +40, +50, +60.
Scale, upper most arc lettered —20 to +6 DB.
DB accuracy is the same as ACV.
"0" DB is equal to .775 V.

CURRENT MEASUREMENTS

Current Ranges — AC and DC.
Full scale 5 UA, 15 UA, 50 UA, 150 UA, 500 UA, 1.5 MA, 5 MA, 15 MA, 50 MA, 150 MA, 500 MA, 1500 MA.
Voltage Drop: 45 MV all ranges AC and DC.
Accuracy ±3% DC and ±4% AC.
Optional external shunt for 15 ampere measurements.

MODEL 801 SPECIFICATIONS (cont'd.)

RESISTANCE MEASUREMENTS

The tester includes two ohmmeter circuits. One referred to as "Conventional Ohms" employing a 1½ Volt power source, and the other as "Low Power Ohms" using a 35 MV power source.

Ranges, Conventional Ohms:
X1, X10, X100, X1K, X10K, 100K, 1 Meg.

Ranges, Low Power Ohms:
X.1, X1, X10, X100, X1K, X10K, X100K, X1 Meg.
Ohms Scale 10 Ohms Center.

Max. power applied to device under test on RX1 range:
Conventional Ohms 57 Milliwatts.
Low Power Ohms 35 Microwatts except X.1, .3 Milliwatts.
Power applied to device under test on all higher ranges is correspondingly less.
Accuracy on all ranges is 3 degrees of DC arc.

METER

25 UA suspension movement with approx. 6¾" scale length.
Meter resistance 5000 to 7000 ohms.

Power Source—Batteries
3 — 9 Volt Carbon Zinc, Alkaline or Mercury.
1 — D Cell Carbon Zinc, or Alkaline.

Case —Black molded plastic.
Dimensions 8 x 7 x 5 inches.
Plastic covered steel handle.

Panel —Aluminum with etched black lettering.

Controls —(1) 10 Position Function Selector
(1) 12 Position Range Selector
(1) Zero Adj. Potentiometer - 10 turn type
(1) Ohms Adjust Potentiometer
(1) Mech. Zero Adj. Screw

ACCESSORIES SUPPLIED with Model 801

1 Shielded Probe	Part No. 79-290
1 Input Cable	Part No. 79-291
1 Grd. Test Lead	Part No. 79-298

MODEL 801 SPECIFICATIONS (cont'd.)

2 Alligator Clips
1 Batttery 1½ V 3 — 9 Volt Batteries
1 Instruction Manual

OPTIONAL ACCESSORIES

Carrying Case	Part No. 10-2467
High Voltage Probe Max. 50 KV DC	Part No. 79-292
RF Detector Probe 50 KHz to 200 MHz Max. RF 35 Volts Max. allowable DC in circuit 500 V	Part No. 79-289
15 Ampere Shunt Adapter	Part No. 91-620
AC Current Leakage Adapter Description on page 32	Part No. 60-413

GENERAL DESCRIPTION

The Solid State Volt-Ohm-Milliammeter is one of the most useful instruments in the electronic field, both in the laboratory and for service use. Its high input impedance and wide frequency response gives it considerable advantage over other types of voltmeters. The Triplett Model 801 combines the advantages of a vacuum tube voltmeter with the portability of the V-O-M.

The Model 801 is designed to measure DC voltages, resistance, AC-DC current and AC RMS values. By adding color to the various ranges and combining the DC and AC voltage scales the meter dial has been simplified and made easier to read. The Model 801 is designed with a number of features to protect its highly sensitive meter.

The meter controls are clearly marked on an etched aluminum panel. All measurements are made on an "eight inch meter."

One probe is used for all functions: DC, AC, MA and OHMS. The small, compact probe has a built-in sliding switch which places a megohm resistor in series with the instrument on DC voltage readings. The Model 801 is frequency compensated from 50 Hz to 50 KHz. The solid-state circuit design requires no warm-up period and readings may be made immediately.

BATTERY INSTALLATION

To insure longest battery life, be sure the function selector switch is placed in the OFF position when the meter is not in use.

The sequence given below should be used for battery installation.

1. Unscrew the four screws in the rear of the case and pull the tester out of the case.
2. Loosen two acorn nuts to free the battery cover from the PC board.
3. Install the recommended batteries as shown in the cover. Observe the polarity marking so that the battery + is on the same side as the + on each battery holder.

   Three 9 V Batteries and a 1½ V D cell are used. For long life and stability mercury types are recommended. For excellent zero stability and good performance at moderate cost the following combination is best: a mercury battery for B104 and alkaline for B101, B102 and B103.

   When a mercury battery is used for B104 the coarse zero may require adjustment as specified in the Calibration Section under electrical zero adjustment.

Battery Types

	1.5 V	9 V	9 V Life
Mercury	Not Recommended	1604M	1500 hr.
Alkaline	13 A	1604A	700 hr.
Carbon Zinc	13 F	1604	300 hr.

Note: Batteries are listed by NEDA number.

Mechanical Zero Adjust

1. Turn instrument off.
2. Rotate meter adjustment screw, located below meter face until pointer indicates zero exactly.

BATTERY INSTALLATION (cont'd.)

Set SELECTOR FUNCTION SWITCH to BATTERY TEST position. An indication in the "BATT OK" area indicates usable amplifier batteries.

Set FUNCTION SWITCH to DC and RANGE SWITCH to 1.5 KV range. Adjust panel ZERO ADJUST for zero indication. If it will not adjust, refer to page 27 under Electrical Zero Adjustment.

The following paragraphs on Battery Replacement and Battery Conservation should be read thoroughly. This will inform the user of battery life to be expected and how to use the instrument to maximize battery life.

BATTERY REPLACEMENT

The batteries used are in three different circuits. The type and quality test for each is described below:

B101—Ohms Battery
NEDA Type 13A or equivalent. The ohms battery is discharged only when resistance measurements are being made. This battery should be replaced when the ohms adjust control will no longer calibrate the ohm range to full scale.

B104—Zero Reference Battery
NEDA Type 1604, 1604A or M, or equivalent. The zero reference battery supplies a bias potential required by the amplifier. To eliminate drift, these cells are constantly loaded by a small current. Life of these cells is limited by chemical deterioration, not electrical discharge. They should be replaced every two years or when zero drift becomes excessive.

B102, 103—Amplifier Supply Battery
NEDA Type 1604A or 1604 or equivalent. The amplifier load is approximately 0.4 MA in the DC mode and 1.4 MA in the AC mode.

Replacement is needed when battery test indication is outside the BATTERY OK scale segment.

NOTE

The battery test indicates quality of B102 and B103 only.

BATTERY CONSERVATION HINTS

The greatest battery drain occurs in the ohmmeter position on the X1 range in conventional ohms. The drain on B101 is approximately 150 MA when the test leads are shorted together. The drain is considerably less on higher ohms positions. It is therefore recommended that the higher ohms ranges X10, X100, X1K be used whenever practical. If it is necessary to use the X1 range quite frequently it is recommended that the LPΩ mode be used. In this mode the maximum current drain is only 3.6 milliamperes, except on RX.1 when it rises to 58 MA.

The instrument should not be left in the LPΩ mode for extended periods since the drain of 3.6 MA or 58 MA is continuous on B1 whether the test leads are shorted or not.

The minimum current drain mode is DC Volts where the current is approximately .4 MA.

DC VOLTAGE MEASUREMENTS

Range: .05 through 1500 V.

The Probe switch should be in the DCV position for all DC voltage measurements.

The probe is positive when the function switch is in the +DC Volts position and negative when in the —DC Volts position.

1. Set the function switch to desired function: +DC Volts or —DC Volts.
2. Short test leads together and adjust ZERO control for zero pointer indication.
3. Select a higher voltage range than the voltage to be measured and connect the ground clip to ground (or the lowest potential of circuit under test).
4. Connect the probe tip to the high side of the voltage to be measured.
5. Set the range switch to the position that gives a reading nearest full scale and read on the scale corresponding to the range setting.
6. NULL MEASUREMENT can be performed by setting the zero to the center scale null line with the ZERO ADJUST CONTROL. Low batteries may require adjustment by COARSE ZERO CONTROL, as explained under Electrical Zero Adjustment.

AC VOLTAGE MEASUREMENTS

Range: .005 through 1500 V.

The probe switch should be in the ACV, OHMS, MA position for all AC voltage measurements. Values are read on the black scale function.

1. Set the function switch to ACV.
2. Select a higher voltage range than the voltage to be measured.
3. Connect the ground clip to ground (or the lowest potential

of circuit under test).

4. Connect the probe tip to the other side of the voltage.
5. Reset the range selector switch for a reading nearest full scale.
6. The AC voltage is then read on the scale corresponding to the range setting.

NOTE

No zero adjustment is required in the ACV function. However, stray pick-up will cause an indication on the high sensitivity ranges.

To minimize battery drain, the instrument's AC amplifier operates only in the ACV position.

RESISTANCE MEASUREMENTS

The Model 801 contains two ohms test circuits, a conventional circuit with a 1½ volt battery as a power source, and a low power circuit with a power source of 35 Millivolts.

The conventional ohms circuit is selected by the FUNCTION SWITCH. (+Ω or —Ω). In +Ω position a positive voltage is presented to the red probe tip and negative to the black ground lead, while in —Ω a negative voltage is applied to the red probe and a positive voltage to the ground lead. This circuit is handy for checking forward and reverse resistance of semi-conductors. With the polarity reversing feature the test leads need not be exchanged, since the function switch provides the polarity reversal.

The low power ohms circuit is selected by turning to the LPΩ position. No polarity reversing is provided in this position since the low potential used in this circuit is below the threshold of conduction of semiconductors. RX.1 is an LP only range.

The low power ohms circuit is most useful for checking resis-

tances in circuit since it eliminates the errors caused by diode or transistor loading.

The circuit is also safe for checking resistances between terminals of Integrated Circuits.

The maximum power applied to the device under test is 31μ watt on the X1 range and is considerably less on all other ranges. The RX.1 range is .3 mW.

CAUTION

BE SURE THAT THERE IS NO EXTERNAL POWER TO RESISTOR UNDER TEST. FALSE READINGS OR A BLOWN FUSE MAY RESULT.

1. Set the test probe to OHMS and short test leads.
2. Select desired ohms function, either $+\Omega$, $-\Omega$ or LPΩ.
3. Turn the RANGE SWITCH to the range which will best cover the resistance to be measured.
4. Check meter zero on the RX1K range, LPΩ function.
5. Check for ∞ with leads open. To reset, adjust the OHMS ADJUST CONTROL.
6. Connect the unknown resistance between the test leads, making sure that it is isolated from any other circuit components which might introduce error.
7. Read the numerical value from the scale directly and apply the multiplying factor for the resetting of the RANGE SWITCH.

NOTE

With the test lead shorted in the RX1 range, the test lead resistance is indicated on the meter. This resistance should be subtracted from the resistance measured.

CURRENT MEASUREMENTS

The Model 801 provides 12 current ranges. These range from 5 UA to 1.5 A. The circuit voltage drop for a FS reading on all ranges is 45 Millivolts. DC or AC currents (50 cps to 50 KC) can be measured.

1. Set switch on probe to the MA position.
2. Rotate selector to the desired current range—if current area is unknown set to the highest current range.
3. If AC current is to be measured, select AC MA. If DC current is to be measured, set to DC MA.
4. Check zero on the meter, if off, adjust zero adjust control as in DC Voltage Measurements set up. For AC measurements zero adjust is unnecessary.
5. Connect the red probe to the positive source of current to be measured and black ground lead to the negative terminal. For AC measurements observance of polarity is unnecessary.

MODEL 801 0-15 AMPERE SHUNT

Part No. 91-620

Place instrument on AC MA or DC MA depending on current to be measured.

Place range selector to .15 range.

Connect power leads observing polarity if DC current is to be measured.

Read directly on the 0-15 arc.

DB MEASUREMENTS

The DECIBEL SCALE can be used to determine power level based on 0 dB = 1 mW in 600 OHMS. The operation of the Model 801 is the same as AC Voltage Measurements. The numerical value is indicated by meter scale and added to the dB value for the position of the RANGE SWITCH.

This meter is capable of direct dB measurements by direct addition of range and dial dB readings. Example: If the meter scale is at —4 dB and the range at +40 dB the level is 36 dB. If the range is at —40 dB with the same —4 dB on the meter the level is —44 dB, again by direct addition of range and scale readings. Both AC and DC dB measurements can be made in this manner.

Refer to Fig. A for decibel correction for impedance other than 600 ohms.

The following formula or Fig. B can be used to convert the dB reading into watts:

$$P_{(watts)} = (1 \times 10^{-3}) \text{ antilog } (dB/10)$$

$$P_{(mw)} = \text{antilog } (dB/10)$$

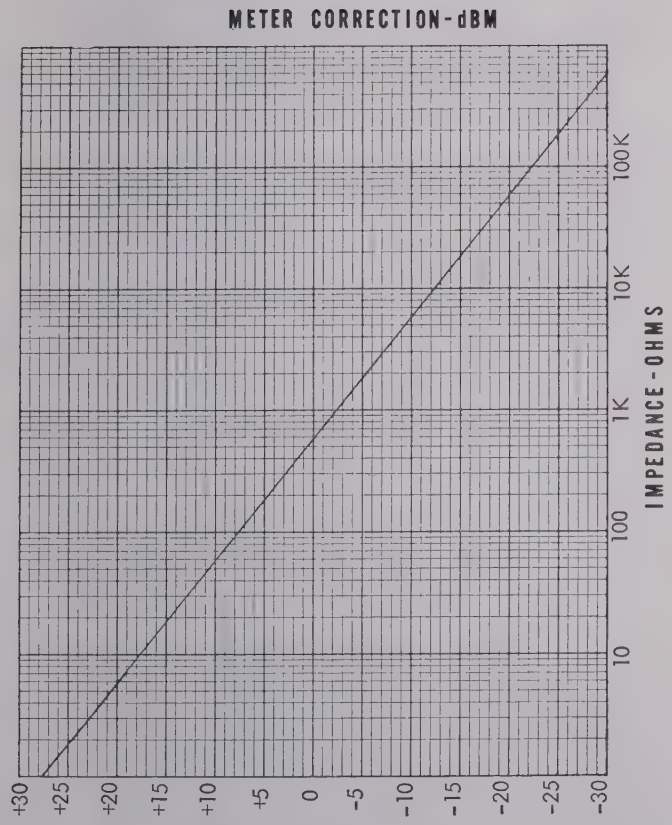


Fig. A DB Correction Chart

Fig. B Voltage vs. Power

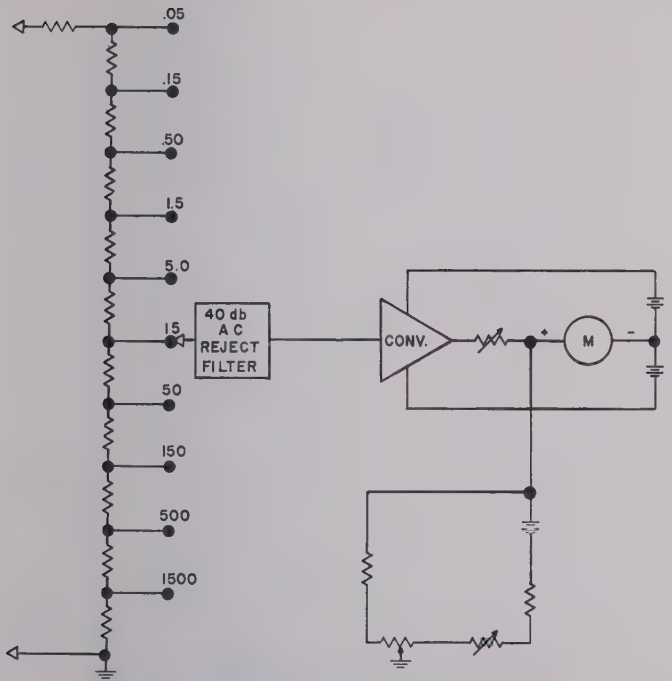


Fig. 1. Simplified Schematic, DC Voltmeter

DC VOLTS

In the DC mode of operation a highly linear impedance converter consisting of a bootstrapped FET circuit is used to provide a high input impedance with a low drive impedance to the metering circuit.

A precision voltage divider string with a 10 megohm resistance is used to extend the 50 MV basic sensitivity of the impedance converter to 1500 V in ten, 10 DB steps.

An additional 1 megohm resistor in the probe isolates the probe cable capacitance from the circuit under test so as not to interfere with RF circuits and raises the input to the specified 11 megohms.

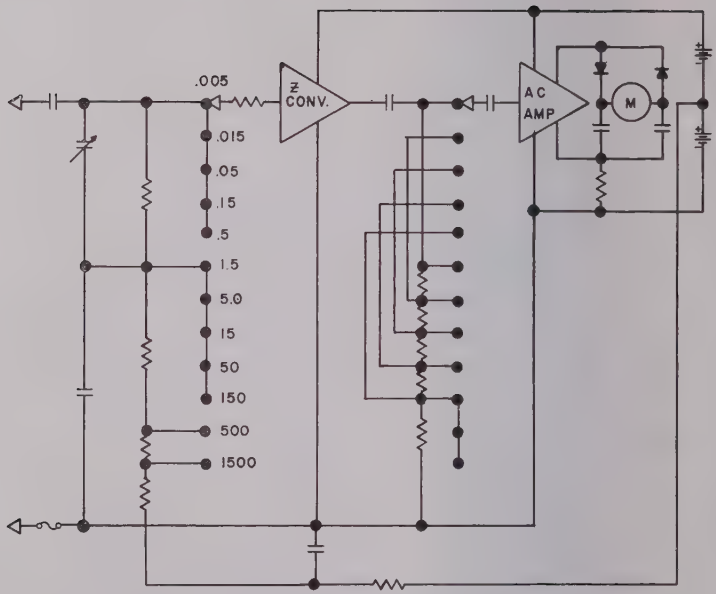


Fig. 2. Simplified Schematic, AC Voltmeter

AC VOLTS

AC Voltages of .5 V and less are fed directly to an impedance converter which feeds a low impedance attenuator and the AC Amp.

Voltages of 1.5 to 1500 Volts are attenuated by a compensated high impedance stick before going to the impedance converter.

The AC Amplifier is conventional with DC feedback from Q105 emitter to Q104 base for bias stability. The output is detected by an average responding detector and applied to the meter. Current feedback from the detector output to Q104's emitter gives the unit excellent linearity and stability.

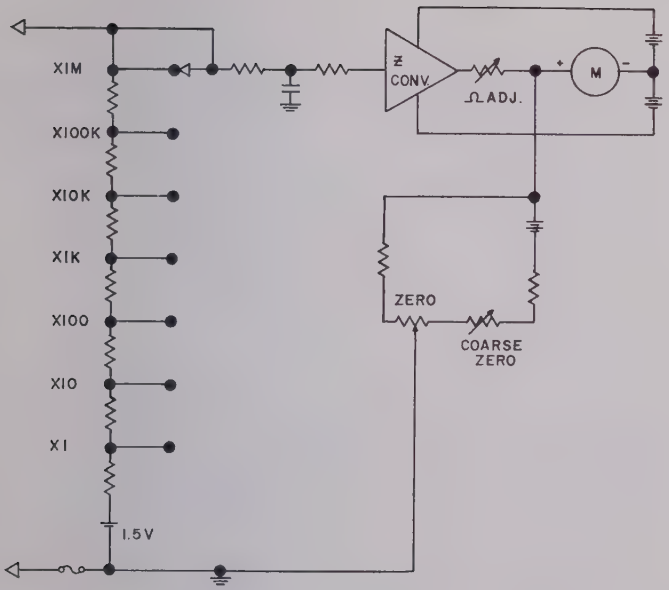


Fig. 3. Simplified Schematic, Conventional Ohms

OHMS

Ohms are measured by placing a 1.5 V battery, a known and an unknown resistance in series and measuring the resulting voltage across the unknown resistance after first calibrating the meter to $^{V}Batt = {}^{V}FSD$.

This voltage, V, is equal to $\frac{X}{R + X}$ (V Batt). Since R is the known resistance and is always 10 or a power thereof center scale is 10 on this meter.

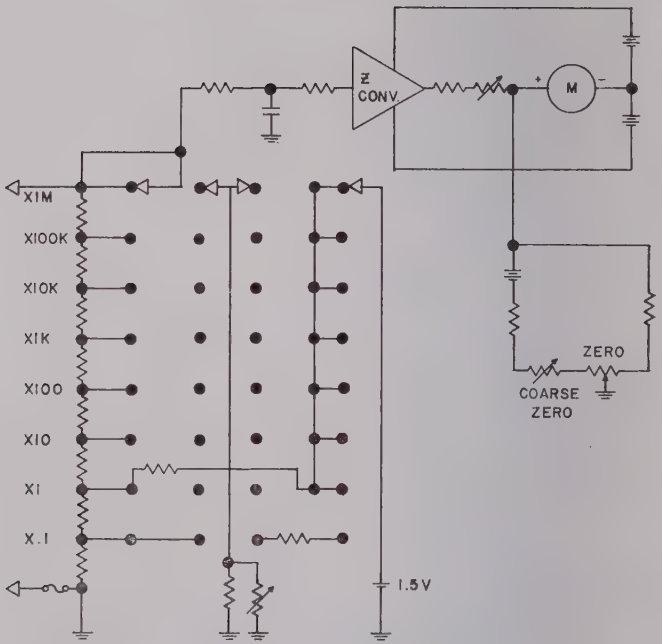


Fig. 4. Simplified Schematic, LP Ohms

LP OHMS

This circuit is the same as the ohms except that the sensitivity is 35 MV. This voltage is derived from the 1.5 V ohms battery and a precision divider. The lowest of the ranges RX1 and RX.1 have additional networks to change this voltage slightly and thus compensates for the internal and probe wiring resistances.

DC MA

In the DC Milliamp function the unknown current is passed through a known precision resistance then picked off via 4 terminal methods so that switch variables will not affect the resulting voltage.

This voltage, which corresponds to IR is fed to the impedance converter, measured and is read out in Milliamps.

AC MA

The AC Milliamp function passes the unknown current through a precision 4 terminal resistance also. It is picked off and AC coupled to the impedance converter, AC coupled to a 10:1 Divider which in turn is AC coupled to the X10 AC Amplifier. The AC Amplifier then drives the metering circuits.

MAINTENANCE

This section contains testing and service information. Periodic routine maintenance required by the 801 is limited to replacement of the batteries.

Repair or Service

In the event repair or service is required, please outline the nature of the difficulty. By providing this information, Triplett can supply more efficient service.

Inoperative Unit

Should your Model 801 become inoperative the first recommended step is a battery check. Procedures are given in the battery installation section. One can also use a VOM and check each battery individually.

Fuse

The fuse, when open, renders the entire tester inoperative. The fuse will most likely be blown during current measurements when an overload exists or when making resistance measurements with power applied to the resistor under test. The fuse, a 2 Amp, 8 AG is located on top of the smaller of the two circuit boards while the spare fuse is mounted on the large board at the end of the battery case.

PERFORMANCE CHECK

1. A DC Voltage source to supply from .05 to 1.5 KV accurate within .15% is recommended for DC checks and calibration.
2. An AC Voltage source from .005 to 1500 V accurate to within .25%.
3. An AC Voltage transfer standard to produce accurate voltages over the range of 50 Hz to 50 KHz from .005 to 1.5 V.
4. Accurate Resistors as listed:

1 Ohm	±0.1%	10 K	±0.1%
10 Ohm	±0.1%	100 K	±0.1%
100 Ohm	±0.1%	1 Meg	±0.1%
1000 Ohm	±0.1%	10 Meg	±0.1%

DCV

Set switches to the .05 V +DCV mode. Set probe switch to DCV. Check zero.
Apply rated full scale voltage to each range of the +DCV function.
The indication error shall be no greater than 2%.
Repeat above on the —DCV function.

ACV

Set switches to the .005 V ACV mode. Set probe switch to ACV.

Apply rated full scale voltage to each range of the ACV function.

The indication error shall be no greater than 3%.

Reset switches to the .005 V ACV mode. Probe switch remains on ACV.

Using a transfer standard check frequency response from 50 Hz to 50 KHz.

The indication error shall be no greater than 3% to 20 KHz and 5% from 20 KHz to 50 KHz.

PERFORMANCE CHECK (cont'd.)

OHMS

Set probe switch to OHMS.

Set switches to the 1.5 KV +DCV mode. Check zero.

Set switches to the RX1 OHMS mode. Adjust OHMS ADJUST CONTROL for full scale indication.

Connect the center scale value of resistance to each range of the ohms function.

Check both conventional and LP ohms.
The indication error shall be less than 3 degrees of arc.

CURRENT RANGES

These need not be checked since they are a function of the AC and DC voltage circuits.

Low Power Ohms Adjustment

The LP ohms circuit utilizes the DC Amplifier as does the conventional ohms circuit. In the conventional ohms circuit the DC amplifier sensitivity is set at approximately 1½ Volts FS, the sensitivity is controlled with the Ohms Adjust Control. In the LP ohms circuit the DC amplifier sensitivity is set to about 35 millivolts FS and this is also controlled with the Ohms Adjust Control. Since the sensitivity is much greater in the LP ohms, the zero adjust should be made in this function first, then when switched to the conventional ohms position the zero setting should remain constant.

For FS correlation between the two ohms circuits an additional internal potentiometer is provided. The adjustment is made as follows:

1. Set selector switch to LP ohms.
2. Set range selector to X1K.
3. Set probe switch to ohms.
4. Short probe tip to ground lead.

PERFORMANCE CHECK (cont'd.)

5. Zero the pointer.
6. Set function selector to + ohms.
7. Separate probe tip from ground.
8. Adjust ohms control so pointer is at ∞.
9. Reset the function selector to LP ohms.
10. Adjust R106 to ∞.
11. Set range selector to RX.1.
12. Zero the pointer with probe to ground.
13. Separate probe tip from ground.
14. Set ohms control about 15° - 20° from clockwise stop.
15. Adjust R156 for ∞.

If these adjustments are made carefully the zero and FS indications for both ohms circuits should correlate when switching from one to the other. As the ohms battery ages it may be necessary to repeat these adjustments.

The RX.1 however will always have to be re-zeroed before use as you are compensating for variation in switch and lead resistance on this range. This will also necessitate small changes in the ∞ adjustment with the ohms control.

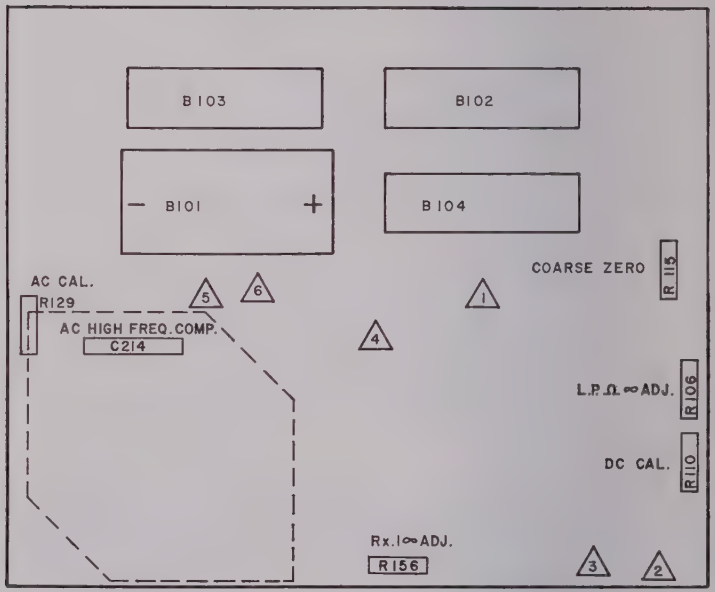


Fig. 5 Calibration Control Locations
(Viewed from rear of chassis)

1. Input to DC Amp
2. Output of DC Amp
3. Input to 2nd AC STICK
4. Input to AC Amp
5. Output of AC Amp
6. Feedback of AC Amp

CALIBRATION

1. Remove case — loosen screws in the back. Pull case from instrument.

Mechanical Zero Adjustment

1. Turn instrument off.
2. Rotate meter adjustment screw, located below meter face until pointer indicates zero exactly.

Electrical Zero Adjustment

Due to change in battery voltages, it may be necessary to reset the COARSE ZERO ADJUST control located on PC Board. To do this:

1. Set FUNCTION SWITCH to DC and SELECTOR SWITCH to 1.5 KV range. Rotate panel ZERO ADJUST to clockwise stop.
2. Adjust COARSE ZERO CONTROL (R115 on PC Board to approx. ¾ of full scale). This is not critical, and renders the 801 usable as a null detector. Adjust panel ZERO ADJUST for zero indication (O).

Calibration

Set switches to the .05 V +DCV mode. Set probe switch to DC.

Apply +.05 V DC from a calibrator and adjust R110 for exactly .05 indication.

Reset switches to .005 V AC mode. Set probe switch to ACV.

Apply .005 V @ 60 Hz and adjust R129 for full scale indication.

Reset generator to 50 KHz. Readjust generator level controls for full scale deflection. Note the amount of correction required. (It must not exceed 5%).

Set range selector to 1.5 V range.

Set generator to 50 KHz.

Set level to 1.5 V + % of correction noted above.

Adjust C214 for exactly 1.5 V.

Reset generator to 20 KHz and generator level to 1.5 V. Reading should not drop more than 1 minor division.

TROUBLESHOOTING CHART

Instrument inoperative or will not zero	Incorrect coarse-zero setting	Readjust R115
	Faulty Batteries	Check Voltage B101 1.5 V B102 9 V B103 9 V B104 9 V, 8.4 if Hg.
	Faulty PC Board	Check for presence of signal at Q101
Instrument inoperative on ACV only	Open input attenuator	Check R231, 232, 233, 234. (Voltage at gate Q101 should be approximately 9 V).
	Faulty Attenuator	Check R241, 242, 243, 244
	Defective AC Amplifier	Check: Ic Q104 = .2 M Ic Q105 = .8 M
Instrument inoperative on DCV and Ohms	Faulty Attenuator	Check R235-244, R145-152, R201-2
	Faulty Bias Network	Check R113, 114, 115, 316, B104
DCV zero drifts excessively	Faulty B104	Replace B104
		Check for leakage to ground
Zero adjustment changes when switched from +DCV to -DCV	Mechanical zero incorrectly set	Correct mechanical zero setting
	Defective Q101 or CR101	Check or replace
+DCV sensitivity incorrect	R110 incorrectly set or Defective DC Amplifier	Calibrate Check Q101, 102, 103
ACV sensitivity incorrect	R129 incorrectly set or Defective AC Amplifier	Calibrate Check Q104, 105, 106

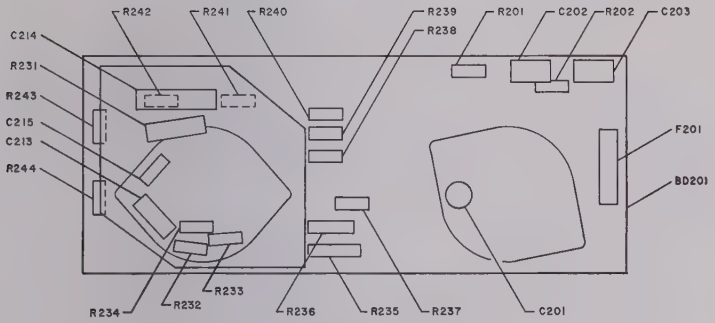
REPLACEABLE PARTS 801

REF. NO.	DESCRIPTION	PART NO.
B101	Battery, 1.5V	2426-1
B102	Battery, 9V	37-36
B103	Battery, 9V	37-36
B104	Battery, 9V	37-36
BD101	Circuit Board w/Comp.	87-240
BD201	P.C. Board w/Comp.	87-241
C104	Capacitor, 5MF/50V	43-281
C105	Capacitor, .04MF/500V	43-286
C106	Capacitor, .02MF/600V	43-125
C107	Capacitor, .02MF/600V	43-125
C108	Capacitor, 1MF/50V	43-280
C109	Capacitor, 4.7MF/35V	43-418
C110	Capacitor, 4.7MF/35V	43-418
C111	Capacitor, 5MF/50V	43-281
C112	Capacitor, .15MF/75V	43-283
C113	Capacitor, 50MF/25V	43-277
C201	Capacitor, .01MF/500	43-198
C202	Capacitor, .15MF/75V	43-283
C203	Capacitor, .15MF/75V	43-283
C213	Capacitor, 30MF/15V	43-279
C214	Capacitor, .8-18PF/2500V	43-338
C215	Capacitor, .0047/100V	43-293
CR101	Diode	127-28
CR102	Diode, 1N4004	127-93
CR103	Diode, DA805	127-27
CR104	Diode, DA805	127-27
F201	Fuse, 8AG, 2A	3207-18
M1	Assembly, Instrument	52-5023
Q101*	Transistor	127-26
Q102	Transistor, 2N2923	127-31 or 32
Q103	Transistor, Special	127-72
Q104	Transistor, 2N2925	127-34
Q105	Transistor, 2N5089	127-37
Q106	Transistor, 2N5089	127-37
R103	Resistor, 9K	15K-9001TC5
R104	Resistor, 1K	15K-1001TC5
R105	Resistor, 825	15K-8250TC5
R106	Resistor, Variable 500	16-190
R108	Resistor, 182	15K-1820TC5
R109	Resistor, 1.65K	15K-1651TA3
R110	Resistor, Variable 250	16-205
R111	Resistor, 48K	15K-4802TC5
R112	Resistor, 1.33M	15K-1334TC5
R113	Resistor, 330K	15R-334JC
R114*	Resistor	

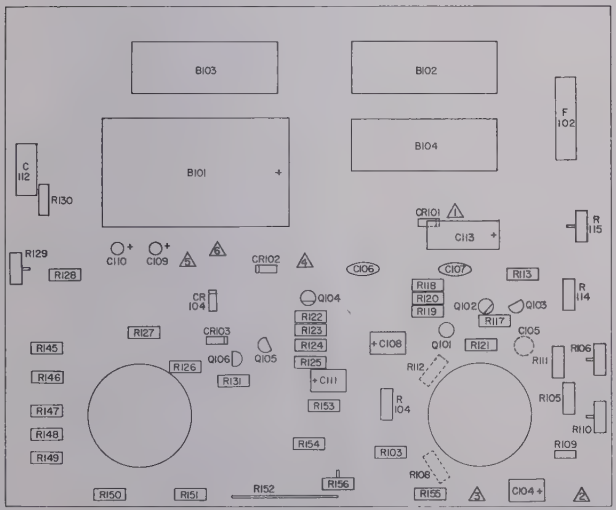
* Matched Pair

REPLACEABLE PARTS 801

REF. NO.	DESCRIPTION	PART NO.
R115	Resistor, Variable, 250K	16-248
R117	Resistor, 47K	15R-473KC
R118	Resistor, 68K	15R-683KC
R119	Resistor, 39K	15R-393KC
R120	Resistor, 39K	15R-393KC
R121	Resistor, 3.6K	15R-362JC
R122	Resistor, 47K	15R-473KC
R123	Resistor, 27K	15R-273JC
R124	Resistor, 1M	15R-105JC
R125	Resistor, 6.8K	15R-682KC
R126	Resistor, 47K	15R-473K3
R127	Resistor, 110	15K-1100TC5
R128	Resistor, 300	15R-301JC
R129	Resistor, Variable 500	16-190
R130	Resistor, 330K	15R-334KC
R131	Resistor, 390	15R-391KC
R145	Resistor, 68.4	15K-684FTC5
R146	Resistor, 21.6	15K-216FTC5
R147	Resistor, 6.84	15-5396
R148	Resistor, 2.16	15-5395
R149	Resistor, .684	15-2173
R150	Resistor, .216	15-5394
R153	Resistor, 415	15K-4150TC5
R154	Resistor, 4.64	15-5424
R155	Resistor, 20.5	15K-205FTC5
R156	Resistor, Variable 100	16-215
R201	Resistor, 470K	15R-474JC
R202	Resistor, 470K	15R-474JC
R231	Resistor, 10M	15-851
R232	Resistor, 21.6K	15K-2162TA3
R233	Resistor, 6.84K	15K-6841TA3
R234	Resistor, 3.16K	15K-3161TA3
R235	Resistor, 6.84M	15-5431
R236	Resistor, 2.16M	15-5432
R237	Resistor, 684K	15K-6843TC5
R238	Resistor, 216K	15K-2163TC5
R239	Resistor, 68.4K	15K-6842TC5
R240	Resistor, 21.6K	15K-2162TA3
R241	Resistor, 6.84K	15K-6841TA3
R242	Resistor, 2.16K	15K-2161TC5
R243	Resistor, 684	15K-6840TC5
R244	Resistor, 216	15K-2160TC5
R307	Resistor, Variable, Dual	16-214
R316	Resistor, Variable, 50K	16-223
	Knob (2)	34-114
	Knob (2) Push On	34-117


R242
R241
R240
R239
R238
R201
C202
R202
C203
C214
R231
R243
C215
C213
R244
F201
BD201
R234
R232
R233
R236
R235
R237
C201

BD 201


B103
B102
F 102
B104
C 112
B101
R130
CR101
C113
R 115
R129
C110
C109
CR102
C106
C107
R113
R128
CR 104
Q104
R118
R120
R119
Q102
Q103
R 114
R122
R123
R124
R125
R127
CR103
+C108
Q101
R121
C105
R117
R145
Q106
Q105
R126
R131
+C111
R112
R111
R106
R146
R153
R 104
R105
R147
R148
R154
R103
R110
R109
R149
R108
R150
R151
R152
R156
R155
C104 +

BD101

MODEL 801 AC CURRENT LEAKAGE ADAPTER

Part No. 60-413

Adapter used with new or existing Model 801 FET V-O-M's permits AC current leakage measurement checks for either medical or commercial appliance applications. Meets NFPA and AAMI Standards for Type A Medical AC Current Leakage Tests and Proposed ANSI Standard C101.1 for Commercial Appliance AC Current Leakage Tests.

Leakage Readings: 8 ranges, 10 uA FS to 30 mA FS.
Resolution: .2 uA on lowest V-O-M range.
Accuracy: ±4% of FS.
Frequency Response: Approximates the C. F. Dalziel's "50 Percentile Threshold of Perception Curve, within ± 1.0 dB".
Input Impedance: Switch selection for medical or commercial appliance leakage measurements.
Medical — 500 ohms test load.
Commercial Appliance — 1500 ohms test load.

WARRANTY

The Triplett Corporation warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair or replace such instruments which under normal use and service, disclose the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing or replacing any instrument or test equipment which proves to be defective, when returned to us transportation prepaid, within ninety (90) days from the date of original purchase.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment to injure their stability or reliability or which have been subject to misuse, negligence or accident or which have had the serial number altered, effaced, or removed. Neither does this warranty apply to any of our products, which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories including all vacuum tubes and batteries not of our manufacture used with this product are not covered by this warranty.

The Triplett Corporation reserves the right to discontinue models at any time, or change specifications, price or design, without notice and without incurring any obligation.

Upon acceptance of this material the purchaser agrees to assume all liability for any damages, and bodily injury which may result from the use or misuse of the material by the purchaser, his employees, or others and that the Triplett Corporation shall incur no liability for direct or consequential damage of any kind.

Parts will be made available for a maximum period of five (5) years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, et cetera, which were furnished in the standard or special models.

This warranty and conditions of sale are in lieu of all others expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

TRIPLETT CORPORATION
BLUFFTON, OHIO
45817

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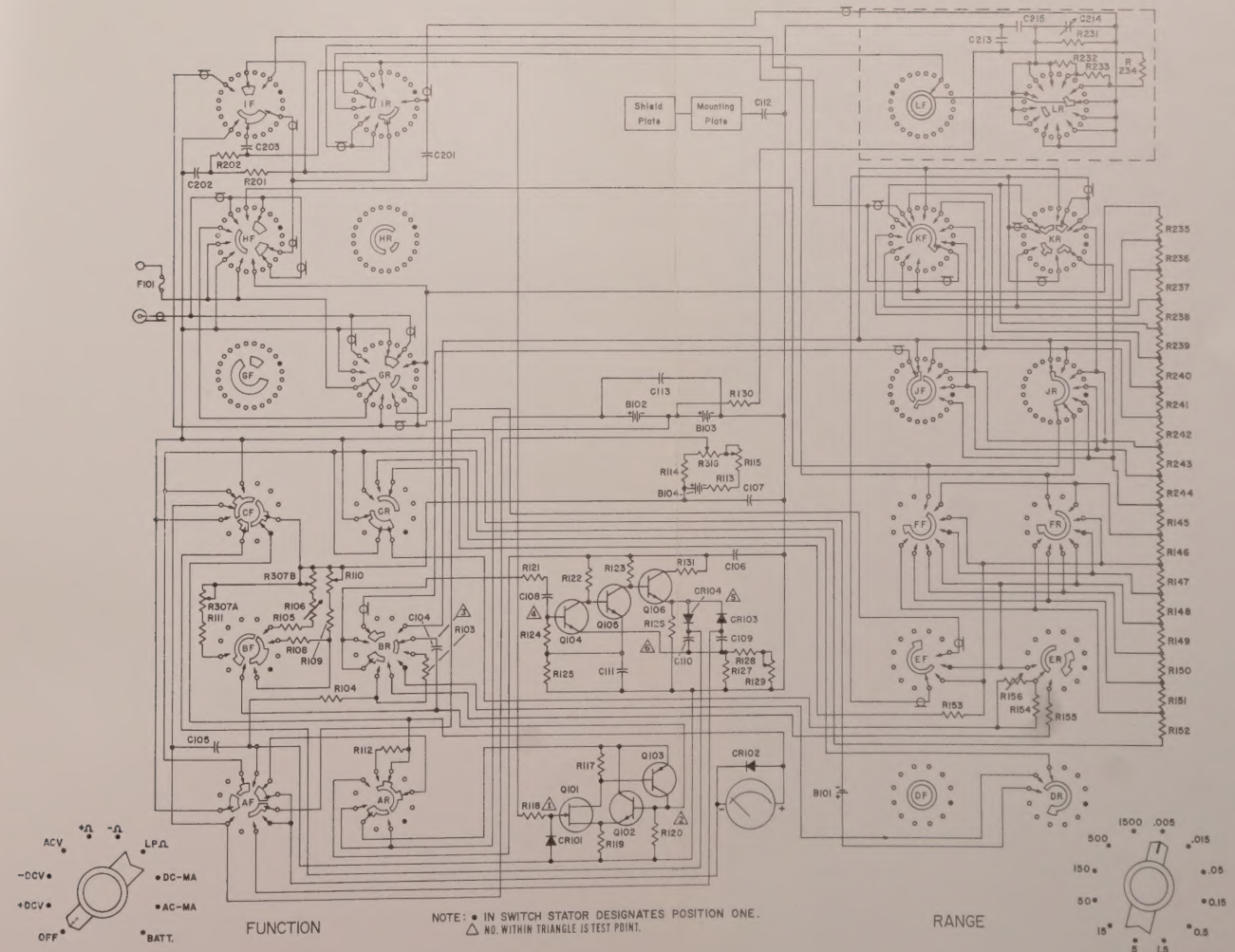
MODEL 801 SCHEMATIC



NOTE: ● IN SWITCH STATOR DESIGNATES POSITION ONE.
△ NO. WITHIN TRIANGLE IS TEST POINT.

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